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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/597,459	07/26/2006	Taisuke Yamamoto	10873.1930USWO	1421

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EXAMINER	
CHAN, HENG M	

ART UNIT	PAPER NUMBER
1793	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/597,459	YAMAMOTO ET AL.	
	Examiner	Art Unit	
	HENG M. CHAN	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 June 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 July 2006* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/21/2007 7/26/2006*.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

Claims 1-8 are pending and presented for examination on the merit.

Drawings

1. Figure 12 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2002-372231 to Tsuda et al.

4. Regarding claim 1, Tsuda et al. teach a liquid/fuel feeding device (i.e. a fuel cartridge), comprising a tank part 12 (i.e. a fuel storage container) and a fuel supply port

44, wherein a fuel supply port protecting mechanism is provided at the fuel supply port, and the fuel supply port protecting mechanism includes a supply port outer cover 402 with a moving part provided with a supply port cap 301 that opens and closes like a door, and a locking means for holding the supply port cap 301 closed (abstract and drawing 1).

Regarding claim 2, Tsuda et al. teach that the supply port 44 is closed by the supply port cap 301 and the moving part starts being locked by the moving part locking means when the supply port outer cover 402 is pressed down to close (abstract). That is, the physical access to the fuel supply port is not allowed unless the locking means is cancelled and the supply port outer cover 402 (which is just like a door) is open.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over CA 2 467 093 to Deinzer et al., in view of JP 2002-372231 to Tsuda et al.

7. Regarding claims 1-2, Deinzer et al. teach a fuel cartridge for a fuel cell, comprising a fuel chamber 1c (i.e. a fuel storage container) and an outlet device 1a (i.e. a fuel supply port), wherein a fuel supply port protecting mechanism is provided at the fuel supply port, and the fuel supply port protecting mechanism includes a closure

device enabling repeated opening and closure of the fuel cartridge (i.e. a door) (Figures 3-5 and page 3, 4th-5th paragraphs).

Deinzer et al. do not expressly teach that the fuel supply port protecting mechanism includes a lock mechanism for locking the door.

Tsuda et al. relate to a liquid/fuel feeding device (i.e. a fuel cartridge), comprising a tank part 12 (i.e. a fuel storage container) and a fuel supply port 44, wherein a fuel supply port protecting mechanism is provided at the fuel supply port, and the fuel supply port protecting mechanism includes a supply port outer cover 402 with a moving part provided with a supply port cap 301 that opens and closes like a door, and a locking means for holding the supply port cap 301 closed (abstract and drawing 1). As per claim 2, Tsuda et al. teach that the supply port 44 is closed by the supply port cap 301 and the moving part starts being locked by the moving part locking means when the supply port outer cover 402 is pressed down to close (abstract). That is, the physical access to the fuel supply port is not allowed unless the locking means is cancelled and the supply port outer cover 402 (which is just like a door) is open.

Therefore, it would have been obvious to one of ordinary skill in the art at time of invention to have included a lock mechanism to hold the door closed in the fuel cartridge provided by Deinzer et al., motivated by the fact that the skilled artisan would have appreciated the security that a lock mechanism provides in addition to a door, in order to prevent damage to the fuel supply port, accidental leakage or improper handling of the fuel cartridge.

8. Regarding claim 3, when the lock mechanism is cancelled, it means that the door is opened or the cartridge is inserted into the insertion port. That is, a mechanism capable of confirming that a lock by the lock mechanism is cancelled is a mechanism capable of confirming that the door is opened or the cartridge is inserted into the insertion port. Deinzer et al. teach that the fuel cartridge exhibits a safety device which is damaged during the insertion process into the cartridge receptacle device and/or during removal from the cartridge receptacle device (page 5, last paragraph).

9. Regarding claims 4 and 7, Deinzer et al. and Tsuda et al. teach the fuel cartridge for a fuel cell having a door and a lock mechanism described above and Deinzer et al. teach a cartridge receptacle device 2 (i.e. an insertion port). It would have been obvious to one of ordinary skill in the art at time of invention to have arrived at a fuel cell comprising the fuel cartridge and the cartridge receptacle device 2. Deinzer et al. also teach using a driving portion on the cartridge receptacle device, e.g. a needle tip 2b, for performing an opening operation of the door, which is an elastic septum in this case (Figures 9A and 9B and Page 15, 4th paragraph).

Deinzer et al. do not expressly teach that the insertion port includes a lock cancel system for canceling a lock by the lock mechanism.

However, Tsuda et al. who utilize a locking means to hold the door closed disclose a moving part locking release button (i.e. a lock cancel system) to release locking by the moving part locking means (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at time of invention to have included a lock cancel system in the fuel cell suggested by Deinzer et

al. and Tsuda et al., motivated by the fact that the skilled artisan would have appreciated having an unlocking system, either included in the cartridge itself or the insertion port, when a locking means is employed because, otherwise, the access to the fuel supply port is impossible.

10. Claims 5, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over CA 2 467 093 to Deinzer et al., in view of US Patent No. 3,509,892 to Macek.

11. Regarding claim 5, Deinzer et al. teach a fuel cartridge for a fuel cell, comprising a fuel chamber 1c (i.e. a fuel storage container) and an outlet device 1a (i.e. a fuel supply port), wherein a fuel supply port protecting mechanism is provided at the fuel supply port, and the fuel supply port protecting mechanism includes a valve provided on a fuel passage connecting the fuel storage container to the fuel supply port (Figures 10A and 10B). Furthermore, Deinzer et al. teach that a combination of fuel cartridge and the cartridge receptacle device comprises a dosing device that advantageously comprises at least one valve which can be actuated (from page 4, 4th paragraph to page 5, 3rd paragraph).

Deinzer et al. do not expressly teach that a plurality of valves is included in the fuel supply port protecting mechanism provided at the fuel supply port specifically.

Macek, who also relates to an apparatus arrangement involving passing a fluid such as water through a valve (abstract), teaches that using a plurality of valves in a line or a plurality of lines, each having a valve, provide convenience in cleaning or replacing one of the valves without interrupting operation and as a safety measure, if the actuated

valve should fail, the plurality of preset valve lines can provide a temporary means of level control by manually monitoring fluid through one or more of the lines provided (column 4, lines 41-51).

Therefore, it would have been obvious to one of ordinary skill in the art at time of invention to have replaced one valve with a plurality of valves at the fuel supply port in the cartridge provided by Deinzer et al., motivated by the fact that Macek teaches that a plurality of valves provides convenience in cleaning or replacing one of the valves and a safety measure in case the actuated valve fails. Additionally, Deinzer et al. teach that using at least one valve enables fast activation with high precision and little mechanical complication and allows a simple and precise way of controlling the fuel flow (page 5, 1^{st}-3^{rd} paragraphs).

Regarding claims 6 and 8, Deinzer et al. and Macek teach the fuel cartridge for a fuel cell having a plurality of valves above and Deinzer et al. also teach a cartridge receptacle device 2 (i.e. an insertion port). It would have been obvious to one of ordinary skill in the art at time of invention to incorporate both in a fuel cell. Deinzer et al. also teach that the insertion port includes a piston 2b (i.e. a driving portion) for opening the valve (Figures 10A and 10B and page 16, 5^{th}-6^{th} paragraphs).

Although Deinzer et al. do not expressly teach that the fuel insertion port includes a driving portion for opening the plurality of valves simultaneously, it would have been obvious to one of ordinary skill in the art at time of invention to have modified the piston 2b or added more pistons in the cartridge receptacle device provided by Deinzer et al. so that the plurality of valves can be opened simultaneously, motivated by the fact that

Deinzer et al. teach that using at least one valve enables fast activation with high precision and little mechanical complication and allows a simple and precise way of controlling the fuel flow (page 5, 1st-3rd paragraphs). Additionally, Macek teaches that using a plurality of valves in a line or a plurality of lines, each having a valve, provide convenience in cleaning or replacing one of the valves without interrupting operation and as a safety measure, if the actuated valve should fail, the plurality of preset valve lines can provide a temporary means of level control by manually monitoring fluid through one or more of the lines provided (column 4, lines 41-51).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HENG M. CHAN whose telephone number is (571)270-5859. The examiner can normally be reached on Monday to Friday, 8:00 am EST to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J.A. LORENGO/
Supervisory Patent Examiner, Art Unit 1793

/HENG M CHAN/
Examiner, Art Unit 1793